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ABSTRACT

This study investigated whether kindergarten children have consistent preferences in explaining success and failure outcomes and whether these attributional preferences are related to other variables known to be associated with achievement motivation. The 48 Hawaiian kindergarteners who served as subjects were asked to explain a fictional outcome by choosing between the four attributional determinants of achievement: task difficulty, ability, effort, and luck, which were presented in paired comparison form. The subjects' IQ, income, and mothers' education, but not birth order, were found to be related to their attributional choices. The finding that 89% of the paired comparison choices were transitive indicates that kindergarten-aged subjects have formed the connection between achievement causes and achievement outcomes. Furthermore, the data indicate that the attributional patterns associated with high vs. low achievement can already be found among kindergarteners. (Author/JMB)

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The Kamehameha Early Education Program (KEEP) is a research and development program of The Kamehameha Schools/Bernice P. Bishop Estate. The mission of KEEP is the development, demonstration, and dissemination of methods for improving the education of Hawaiian and Part-Hawaiian children. These activities are conducted at the Ka Na'i Pono Research and Demonstration School, and in public classrooms in cooperation with the State Department of Education. KEEP projects and activities involve many aspects of the educational process, including teacher training, curriculum development, and child motivation, language, and cognition. More detailed descriptions of KEEP's history and operations are presented in Technical Reports #1-4.

Abstract

This study investigates the preferences kindergarteners have for explaining success and failure outcomes. The 48 Hawaiian kindergarteners of this sample were asked to explain a fictional outcome by choosing between the four attributional determinants of achievement: task difficulty, ability, effort, and luck, which were presented in paired comparison form. The subjects' IQ, income, and mother's education, but not birth order, were found to be related to their attributional choices. The finding that 89% of the paired comparison choices were transitive indicates that kindergarten-aged subjects have formed the connection between achievement causes and achievement outcomes. Furthermore, the data indicate that the attributional patterns associated with high vs. low achievement can already be found among kindergarteners.

Technical Report #39

The Achievement Attributions of Kindergarteners[1,2]

Toni Falbo

Weiner and his colleagues (1970, 1971, 1972) have developed an attributional theory of achievement motivation which concerns the explanations people have for success and failure outcomes. Differences between high and low achievers in preferred explanations of outcomes were found by Weiner and Kukla (1970). They argued that the attributional preferences of high achievers facilitated their achievement; while, the attributional preferences of low achievers discouraged their achievement.

The purpose of this study is to investigate whether kindergarten-aged subjects have consistent preferences in explaining outcomes and to determine if these attributional preferences are related to other variables known to be associated with achievement motivation. Weiner and Peter (1973) found that 31% of their four- to six-year old group were incapable of consistently rewarding and punishing fictional characters who either succeeded or failed at an achievement or moral task. This led Weiner and Peter to conclude that not all children of this age had formed the underlying cognitive mechanisms essential for evaluating achievement in terms of effort, ability, and outcome. Because Weiner

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[1]Falbo, T. The Achievement Attributions of Kindergarteners. Developmental Psychology, 1975, in press. Copyright 1975 by the American Psychological Association. Reprinted by permission.

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and Peter's experimental task was too advanced for 31% of their subjects, Falbo (1973) devised a different methodology to elicit the attributional preferences of kindergarten-age subjects. Falbo obtained the attributional preferences by asking kindergarteners to explain success and failure outcomes by choosing between alternative explanations which were presented in paired comparison form. These alternative explanations represented the four areas of achievement attributions discussed by Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971).

The success of Falbo's (1973) methodology was probably related to the fact that Falbo's experimental task was cognitively less complex than Weiner and Peter's task. That is, Weiner and Peter presented subjects with explained outcomes and asked for evaluations. Falbo presented subjects with outcomes and asked for explanations.

This study represents an investigation of Falbo's (1973) methodology as well as an extension of Falbo's (1973) results. Tests for transitivity and experimenter artifacts are presented in this study. Furthermore, additional variables, such as IQ and income level, are related to the kindergarteners' attributional choices. Such information was unavailable to Weiner and Peter (1973).

Method

Subjects and Experimenters

The sample consists of 48, five-year old children who were enrolled in two kindergarten classes in Honolulu, Hawaii. These children (21 male, 27 female) are predominantly of Part-Hawaiian ancestry and speak Hawaiian-Creole, a nonstandard form of English. The experimenters were two female graduate students in psychology.

Procedure

A story concerning a five-year old child was written in Hawaiian-Creole. It was tape recorded while being read by a native speaker. There were four versions of the story: two outcomes (success/failure) and two sexes for the main character. The outcome concerned the successful or unsuccessful completion of a puzzle and no explanatory cues about the outcome were included in the story.

Each child listened to the taped story once. Half the children heard the success outcome, half the failure outcome. The sex of the main character was matched to the sex of the subjects. Within sex, subjects were randomly assigned to outcome groups. The experiment took place within the classroom as a learning center activity.

Each child was asked to explain why the main character completed (or left incomplete) the puzzle by making choices between pairs of alternatives. Each subject was given six paired comparison choices representing the six possible combinations (order irrelevant) of Weiner's et al. (1971) four dimensions: task difficulty, luck, ability, and effort. The four choices were worded either positively or negatively in Hawaiian-Creole to match the outcome. These four choices were: easy or hard puzzle, lucky or no lucky, smart or stupid, try hard or lazy. The order of presentation of these alternatives was systematically varied.

Other variables

Information about the child and his family background was also gathered. Twenty subjects were from middle class homes; 28 from families receiving welfare benefits. This division is referred to as the income variable. High/low median splits upon WPPSI (full scale) scores constituted an IQ variable. The WPPSI scores ranged from 53 to 125. Median splits were also made upon the

number of years of education obtained by the mother. The mother's education was selected here in lieu of the father's education because of the large number of father absent families in the sample. Mother's education ranged from six to 14 years. In terms of the birth order variable, half the subjects were categorized as later borns; while, the remaining half were placed in an earlier born group. The early born group was composed of first and only borns plus second borns from larger families.

Methodological Tests

One of the experimenters was the author; while the other experimenter was ignorant of not only the Falbo (1973) results, but also Weiner's et al. (1971) theory. If the Falbo paired comparison method was subject to experimenter bias (Rosenthal, 1963), then one would expect to find significant interactions between the experimenter variable and other independent variables, such as income and IQ.

Tests of transitivity (Gerard and Shapiro, 1958) were conducted upon the paired comparison data.

The three subjects who continually repeated the second choice of the paired comparison were eliminated from the data analysis.

Results

If Weiner and Kukla's (1970) attributional differentiation of high and low achievers has any applicability to kindergarteners, then one would expect middle class children, early borns, and children with better educated mothers to demonstrate attributional preferences similar to high achievers. Furthermore, one would expect children with higher IQ's to explain outcomes in a fashion consistent with Weiner and Kukla's description of high achievers. The results of this study support the income and IQ, but not the birth order and

mother's education predictions.

Income

A main effect for income was found ($F=3.99$, $df=1/44$, $.05 < p < .10$) which indicates that middle class subjects chose effort more often as an explanation of outcomes than welfare subjects.

IQ

The IQ variable yielded no significant main effects; however, IQ and outcome (success/failure) interacted significantly twice. The IQ x Outcome interaction with task difficulty attributions ($F=4.65$, $df=1/44$, $p < .05$) indicates that whereas low IQ subjects chose task difficulty often to explain success, high IQ subjects used task difficulty more often as an explanation for failure. The means are presented in Table 1.

Table 1

Mean Number Task Difficulty Choices as a Function of IQ and Outcome

IQ	Outcome	
	Success	Failure
High	1.31	1.82
Low	2.00	1.21

The IQ x Outcome interaction with ability attributions ($F=14.70$, $df=1/44$, $p < .01$) indicates that high IQ subjects use ability much more often in explaining success than failure. In contrast, low IQ subjects used ability equally often as an explanation of success and failure. The ability means are presented in Table 2.

Table 2

Mean Number Ability Choices as a

Function of IQ and Outcome

IQ	Outcome	
	Success	Failure
High	2.31	0.67
Low	1.50	1.64

Birth Order

Birth order failed to produce any significant main effects or interactions. Therefore, in terms of this sample, birth order failed to be related to the achievement attributions of children.

Mother's Education

There were no significant main effects of mother's education; however, mother's education interacted with sex ($F=3.63$, $df=1/44$, $.05 < p < .10$). The means of this interaction (Table 3) indicate that daughters of higher educated mothers used effort as an explanation more frequently than any other group.

Table 3

Mean Effort Choices as a Function of

Mother's Education and Sex

Sex	Mother's Education	
	High	Low
Males	1.33	1.42
Females	2.07	1.23
$\bar{X}$	1.70	1.32

Table 3 also indicates that while there were no significant main effects for

mother's education, the means were in the expected direction. That is, children of higher educated mothers chose effort as an explanation of outcomes more often than children of less educated mothers ($\bar{X}_{high} = 1.70$; $\bar{X}_{low} = 1.32$).

Outcome

Outcome produced a significant main effect among ability attributions ($F=7.65$, $df=1/44$, $p=<.01$). Subjects were more likely to make ability attributions when the outcome was successful than when the outcome was failure.

Sex

Sex yielded no significant main effects, or interactions, except for the interaction with mother's education, reported above.

Experimenter

There was one significant main effect for experimenter. One experimenter evoked more task difficulty explanations than the other ($F=5.13$, $df=1/44$, $p<.05$). However, the experimenter variable did not significantly interact with any of the other variables of the study.

Transitivity

Eleven percent of all the paired comparison choices were intransitive.

Discussion

The results of this study indicate that kindergarten-aged subjects have developed consistent explanations for achievement outcomes. This statement was confirmed by the high percentage (89%) of transitive paired comparison choices made by the subjects.

More importantly, this study found that kindergarten-aged subjects demonstrated attributional preferences that are related to their home environments and IQ. The income finding indicates that subjects from middle class homes emphasize the causal relationship between outcome and effort more than children

from welfare homes. Since achievement is heavily contingent upon persistence at a task, then an appreciation of the causal relationship between effort and outcome would increase the likelihood that middle class children will demonstrate greater achievement than welfare children. This finding is consistent with previous research which has found that children's achievement is related to the socioeconomic status of their families (Deutsch, 1960; Vane, 1970).

The interaction between mother's education and sex indicates that a mother's level of education has greater influence upon daughters than sons. As in the income finding, this preference for effort as an explanation of outcomes increases the likelihood that daughters of higher educated mothers will demonstrate greater achievement than children of less educated women. Other investigators have also found that parents' education is related to their children's achievement (Colemen, 1966).

The failure to find significant birth order effects in this study is probably due to the similar numbers of welfare and middle class children composing the sample. Schooler (1972) has demonstrated that once such socioeconomic factors are controlled, birth order rarely contributes significantly to achievement.

The two IQ x Outcome interactions indicate that subjects explain outcomes as a function of their intelligence level. Lower IQ subjects preferred task difficulty as an explanation for success. In contrast, high IQ subjects preferred task difficulty as an explanation for failure. The effect of these attributional preferences is that low IQ subjects explain success as determined more by factors outside of the control (i.e., external) of the individual. The reverse is true of high IQ subjects. That is, they are more likely to consider failure as brought about by external factors.

In addition to the differences in task difficulty, there were also

differences between high and low IQ groups in their preferences for ability explanations. High IQ subjects used ability much more often as an explanation of success than failure; whereas, low IQ subjects used ability as an explanation equally often for success and failure. Taken together, these attributional biases of high IQ subjects would facilitate their achievement. That is, they are more likely to attribute success internally (ability) and failure externally (task difficulty). These explanatory preferences would enhance their achievement by encouraging the feeling of responsibility for success and discouraging the feeling of responsibility for failure. In contrast, low IQ subjects explain success externally (task difficulty) and fail to discriminate between success and failure in using ability attributions. The net effect of the attributional preferences of these low IQ subjects is to discourage responsbility for success and encourage negative internal attributions for failure.

Similar results were reported by Weiner and Kukla (1970). They found that whereas high achievers were more likely than low achievers to explain success internally, high achievers were also more likely than low achievers to explain failure externally. These similarities in attributional preferences between high achievers and high IQ subjects and between low achievers and low IQ subjects suggest that one's early self-perceptions of ability lead to attributional preferences that facilitate the achievement of high IQ subjects, and inhibit the achievement of low IQ subjects.

Thus, the results of this study strongly suggest that the attributional patterns related to achievement motivation are already formed in kindergarteners. Furthermore, the results of this study suggest that early experiences brought about by socioeconomic factors and differences in intelligence influence the attributional preferences of kindergarteners.

The success of this study in measuring the attributional preferences of

kindergarten-aged subjects may be due in part to the fact that each child was tested by an experimenter who was familiar to him. Even though this method enhances the likelihood of experimenter bias, the results of this study demonstrated that while there were significant experimenter effects, these effects did not interact with other variables. Therefore, experimenter bias did not interfere with the results of this study.

This study also repeated Falbo's (1973) finding that successful outcomes are much more likely to be explained by ability than failure outcomes. In practical terms this means that subjects are more likely to choose "smart" as an explanation of success than "stupid" as an explanation of failure. Similar results were reported by Frieze and Weiner (1971). This finding, however, contradicts the position taken by Jones and Nisbett (1972). They argued that people are more likely to make internal attributions following a negative outcome than following a successful one. This discrepancy can probably best be explained by pointing out that ability may be a special kind of internal attribution. People may be quite willing to make other types of internal statements about others, such as the person is lazy or hyperactive, etc. However, because intelligence is considered to be both a crucial and an invariant quality of an individual, the label "stupid" is reluctantly used. Research investigating the willingness of subjects to use different internal attributions is needed.

References

Coleman, J. S., & Staff. Equality of educational opportunity. Washington, D. C.: U. S. Department of Health, Education, and Welfare, 1966.

Deutsch, M. Minority group and class status as related to social and personality factors in scholastic achievement. Society for Applied Anthropology Monographs, 1960, No. 2.

Falbo, T. L. The attributional explanation of academic performance by kindergarteners and their teachers. Proceedings of the 81st Annual Convention of the American Psychological Association, 1973, 8(1), 123-124. (Summary)

Frieze, I., & Weiner, B. Cue utilization and attributional judgements for success and failure. Journal of Personality, 1971, 39(4), 591-605.

Gerard, H. B., & Shapiro, H. N. Determining the degree of inconsistency in a set of paired comparisons. Psychometrika, 1958, 23(1), 33-46.

Jones, E. E., & Nisbett, R. E. The actor and the observer: Divergent perceptions of the causes of behavior. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), Attribution: Perceiving the causes of behavior. Morristown, New Jersey: General Learning Press, 1971.

Rosenthal, R. On the social psychology of the psychological experiment: The experimenter's hypothesis as unintended determinant of experimental results. American Scientist, 1963, 51, 268-283.

Schooler, C. Birth order effects: Not here, not now! Psychological Bulletin, 1972, 78, 161-175.

Vane, J. Relation of early school achievement to high school achievement when race, intelligence, and socioeconomic factors are equated. In M. L. Goldsmith (Ed.) Black Americans and white racism. New York: Holt, Rinehart, & Winston, 1970.

Weiner, B. Theories of motivation: From mechanism to cognition. Chicago: Markham Publishing Company, 1972.

Weiner, B., Frieze, I., Kukla, A., Reed, L., Rest, S., & Rosenbaum, R. M. Perceiving the causes of success and failure. In E. E. Jones, E. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.) Attribution: Perceiving the causes of behavior. Morristown, New Jersey: General Learning Press, 1971.

Weiner, B., & Kukla, A. An attributional analysis of achievement motivation. Journal of Personality and Social Psychology, 1970, 15(1), 1-20.

Weiner, B., & Peter, N. V. A cognitive-developmental analysis of achievement and moral judgements. Developmental Psychology, 1973, 9(3), 290-309.